

IN THE CLAIMS:

✓ Please amend the Claims of the above-identified application so as to read as follows:

1. (Currently Amended) A method ~~of~~ for distributing a programs to be operated on a server node and/or at least one client node connected to a network using in a network gateway, wherein ~~said for distributing, to nodes connected to a network that is in turn~~ said for distributing, to nodes connected to a network that is in turn connected to a data communication network through the said network gateway, ~~a program to be operated on each node, wherein to said large scale data communication network, a at least one program distribution site is connected to said data communication network, and wherein said at least one program distribution site (i) holdings a said server program and/or a client program necessary for communication with a server using the said server program, and having (ii) has a function of distributing, upon request, a requested said server program and/or client program to a node that has issued said request is connected said network gateway;~~ said method of distributing a programs using said in the network gateway comprising the steps of in said network gateway:
 - preparing a management table storing management information for each of the said server nodes connected to the said network;
 - receiving, from a new server starting a provision of a service on said network from said server node connected to said network, management information related to said new server including a specification of at least one of said at least one program distribution site that holds a server program associated with said new server and/or a client program associated with said new server;
 - updating management information related to said new server;
 - updating said management table in response to the reception of said management information from said new server, updating said management table;

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requesting in response to the reception of said management information from said new server, requesting a transmission from said at least one of said at least one program distribution site of a said server program for associated with said new server and a said client program associated with said new server for a client receiving said new service, to the program distribution site specified by said management information;

receiving at said network gateway, and storing the in a storage provided in association with said network gateway, said server program and the said client program transmitted from said at least one of said at least one program distribution site in response to said request in a storage provided in association with said gateway;

transmitting the said server program associated with said new server stored in said storage to said new server; and

in response to a transmission request of a client program for communication with the new server from a node connected to said network, specifying a identifying, necessary client program by making a reference to said management table, and transmitting said client program associated with said new server stored in said storage to the client nodes that issued said transmission request that request communication with said new server.

2. (Currently Amended) The method of for distributing a programs using in a network gateway according to claim 1,

wherein said step of transmitting said server program to said new server ~~includes~~ comprises the step of:

~~in response to reception of said server program from said program distribution site;~~ transmitting said server program to said new server in response to the reception of said server program by said network gateway from said at least one of said at least one program distribution site.

3. (Currently Amended) The method of for distributing a program ~~in~~ using a network gateway according to claim 1,

wherein said step of transmitting said server program to said new server ~~includes~~ comprises the step of:

transmitting said server program to said new server; in response to the reception by said network gateway of a distribution request of for said server program from said new server; ~~said server program to said new server.~~

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4. (Currently Amended) The method of ~~for~~ distributing a programs ~~using in~~ a network gateway according to ~~any of~~ claim 1, wherein ~~a plurality of said at least one of said at least one~~ program distribution sites ~~are~~ includes a plurality of said program distribution sites connected to said data communication network; , and at least one of said plurality of said program distribution sites includes the function of specifying its position on said data communication network relative to said network gateway and notifying said network gateway of the same; said step of requesting said transmission of said server program associated with said new server and said client program associated with said new server includes comprises the steps of :
- inquiring determining, in response to the reception of said management information from said new server, a program distribution site of which position information on the network with respect to said gateway satisfies a predetermined condition; to an at least one or a plurality of said plurality of program distribution sites specified by said management information; among said plurality of program distribution sites, said one or a plurality of program distribution sites having a function of specifying and notifying to said gateway a program distribution site of which the position of which information on the said data communication network relative with respect to said network gateway satisfies a predetermined condition; and said method further comprising the step of

requesting, to the at least one program distribution site
determined to satisfy said predetermined condition notified to
~~said gateway as one of which position information on the~~
~~network satisfies said predetermined condition, transmission of~~
to transmit said a server program for associated with said new
server and/or said a client program associated with said new
server for the client receiving said new service to said network
gateway.

5. (Currently Amended) The method of for distributing a programs using in a
network gateway according to claim 1, wherein

said at least one of said at least one program distribution site includes a
plurality of said program distribution sites are connected to said data
communication network; and

the said step of requesting said a transmission of said server program
associated with said new server and said client program associated with
said new server includes comprises the steps of:

in response to reception of said management information
~~from said server,~~ obtaining position information on the
said data communication network of for said at least one
of said at least one or a plurality of program distribution
sites specified by said management information among
~~said plurality of program distribution sites,~~ in response
to the reception of said management information from
said new server.

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selecting, ~~from said one or a plurality of program distribution sites, a~~ at least one of said at least one program distribution site of which the position information of which on said data communication network satisfies a predetermined condition, and requesting, ~~to the said at least one selected program distribution site to transmit selected as the position information on said network of which satisfies the prescribed condition, transmission of a~~ said server program for associated with said new server and/or a said client program associated with said new server for the client to receive said new service.

6. (Currently Amended) The method ~~of~~ for distributing a programs ~~using in~~ a network gateway according to ~~any of~~ claim 1, wherein said at least one of said at least one program distribution site holds a plurality of programs for an application; and said method further comprises the steps of: ~~in response to reception of said management information corresponding to said application from said server, obtaining program information of~~ relative to said plurality of programs from said at least one of said at least one program distribution site in response to the reception of said management information from said new server, specifying a server and client programs to be received transmitted, based on the program information of relative to said plurality of programs received from said at least one of said at least one program distribution site, and

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requesting said specified program distribution site;

to transmit transmission of the program selected specified as the
said server program for associated with said new server, and/or
the program selected specified as the said client program
associated with said new server for the client to receive the new
service.

7. (Currently Amended) The method of for distributing a programs using in a

network gateway according to any of claim 1, wherein

said at least one specified program distribution site holds a

plurality of programs for an application;

said step of requesting said a transmission of said server program

associated with said new server and said client program associated with

said new server includes comprises the steps of:

responsive to reception of said management information

corresponding to said application from said server;

obtaining; from a node that ~~will~~ is to be a said client;

management information of the relating to said node that

is to be said client in response to the reception of said

management information from said new server; and

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transmitting the said management information of the node that ~~will~~ is to be said new server, and said management information of the node that ~~will~~ is to be the said client to ~~the~~ said at least one specified program distribution site, wherein said at least one specified program distribution site ~~having~~ has a function of ~~specifying~~ determining and transmitting to said network gateway; a program to be transmitted to each node of said network ~~among the plurality of programs~~; based on the management information of the node that ~~will~~ is to be the said new server and/or the management information of the node that ~~will~~ is to be said client; and

said step of receiving and storing said programs ~~in said~~

storage includes comprises the step of:

receiving and storing in said storage provided in association with said network gateway the said server program associated with said new server and the said client program associated with said new server determined and transmitted selected by said at least one specified program distribution site based on the management information of the node that ~~will~~ is to be the said new server and the management information of the node that ~~will~~ is to be said client and transmitted to said gateway, ~~in a storage provided in association with said gateway.~~

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8. (Currently Amended) A method ~~of~~ for distributing a programs to be operated on a server node and/or at least one client node connected to a network using a network gateway, wherein said ~~for distributing a program to nodes connected to a network that in turn~~ is connected to a data communication network through the said network gateway, a ~~program to be operated on each node,~~ wherein at least one program distribution site is connected to said data communication network, and wherein said at least one a program distribution site (i) holds a holding said server program and/or a client program necessary for communication with a server using said server program, and having (ii) has a function of distributing, upon request, a requested said server and/or client program to a node that issued connected to said network in response to a said request therefor by said node is connected;

said method ~~of~~ for distributing a programs using the said

network gateway ~~includes~~ comprising the steps of:

preparing in said network gateway a management table

storing management information for each of the said

server nodes connected to said network;

receiving, at said network gateway from a new server

starting a provision of a service on said network from

said server node connected to said network, management

information ~~of~~ related to said new server;

updating said management table in response to

~~transmission~~ the reception of said management

information from said new server ~~to~~ by said network

gateway, ~~updating said management table;~~

in response to reception of said management information
~~from said new server~~; requesting a transmission of
~~program information of information related to a server~~
~~program for associated with~~ said new server and
~~information related to a client program associated with~~
~~said new server for a client that receives said new~~
~~service, to a from said at least one of said at least one~~
~~program distribution site specified by said management~~
~~information;~~

receiving at said network gateway from said at least one
of said at least one program distribution site and storing
in a storage provided in association with said network
gateway said the program information of the information
related to said server program associated with said new
server and the said information related to said client
program associated with said new server transmitted
from the program distribution site in response to said
request in a storage provided in association with said
gateway;

transmitting the said information related to said
server program associated with said new server
~~information of the server program~~ stored in said storage
provided in association with said network gateway to
said new server; and

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in response to a transmission request of the program

~~information of the client program for communication
with said new server, specifying from a node connected
to said network, a necessary client program by making a
reference to said management table, and transmitting the
program information of, in response to a request by a
client node connected to said network, to said client
node said information associated with said client
program stored in said storage to the node that
transmitted the transmission request;~~

comparing at said new server said information

related to said server program associated with said new
server received from said storage provided in association
with said network gateway with information related to a
server program running on said new server;

comparing at said client node said information

related to said client program associated with said new
server with information related to a client program
running on said client node;

determining, based upon said comparisons, whether

said program running on said new server node and/or
said program running at said client node requires
updating and/or replacement; and

if said programs running on said new server node and/or on
said at least one client node of said network require
updating and/or replacement, requesting said at least one
of said at least one program distribution site to transmit
said server program to said new server node and/or said
at least one of said at least one program distribution site
to transmit said client program to said client node,
directly

~~whereby at said new server and the node receiving the~~
~~program information of said client program, it becomes~~
~~possible to determine whether the server program and~~
~~the client program are to be obtained from said program~~
~~distribution site or not, respectively.~~

9. (Currently Amended) The method ~~of~~ for distributing a programs using in a
network gateway according to claim 8, wherein

said step of transmitting the ~~program information of said~~
information related to said server program to said new server
~~includes~~ comprises the step of:

~~responsive to reception of a transmission request~~
~~of the program information of said server program from~~
~~said new server, transmitting the program said~~
~~information of~~ related to said server program to said new
server in response to to a request from said new server
therefor.

10. (Currently Amended) A method of for distributing a programs using in a network
~~gateway for distributing, to nodes connected to a network that in turn is~~
~~connected~~ connecting a network to a data communication networks through the, a
~~program to be operated on each node, wherein a at least one~~ program distribution
site connected to said data communication network is provided, said at least one
program distribution site holding said a server program and/or a client program
necessary for communication with a server using said server program and having
a function of distributing, ~~upon request, a requested a program to a at least one~~
node connected to said network that issued said request is connected in response
to a request by said node therefor;

said method of for distributing a programs using in a network gateway
comprising the steps of:

preparing a management table storing management
information for said server each of the nodes connected
in to said network;

receiving a program at said network gateway to be
~~executed at a node connected to said network from a~~
~~corresponding at least one of said at least one~~ program
distribution site and storing said received program in a
storage provided in association with said network
gateway, and transmitting said received program to at
least one node connected to said network;

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detecting an updated version of a said received program
stored in said storage held in said at least one of said at
least one program distribution site, and updating the said
received corresponding program stored in said storage
using with the new said updated version of said program
stored held in said at least one of said at least one said
program distribution site;

requesting transmission of said updated version of said
received program; to that said node which
holds an old version of holding said updated received
program; and

responsive to reception of a transmission request of a
program from that node which holds an old version of
said updated program; transmitting said updated version
of said received the corresponding program stored in
said storage to said node holding said received program
in response to a request therefor by said the node that
has transmitted said transmission request holding said
received program, and

updating said received program at said node holding
said received program using said transmitted updated
version of said received program.

11. (Currently Amended) The method ~~of~~ for distributing a programs using in a
network gateway according to claim 10, ~~wherein said~~ further comprising the step of
updating said received program stored in said storage using with said new updated
version of said program includes the steps of, wherein said step of updating said received
program comprises including:

detecting an updated version of said received program; by
making inquiry as to whether there has been an update of a said
received program at said at least one of said at least one program
distribution site periodically,

transmitting in response to a detection of an updated version of
said received program a transmission request of for said updated
version of said received program to said at least one of said at
least one program distribution site, and

~~updating, by the~~ modifying or replacing said received program
using said updated version of said received program transmitted
from said at least one of said at least one program distribution
site in response to said ~~transmission request of for~~ said detected
updated version of said received program, the corresponding
~~program stored in advance in said storage.~~

12. (Currently Amended) The method of for distributing a programs using in a
network gateway according to claim 10, ~~wherein said~~ further comprising the step
of updating ~~with said new~~ received program stored in said storage using said new
version of said received program, wherein said step of updating comprises
includes the steps of:

~~responsive to reception of a notification that a program has been~~
~~updated from said program distribution site, transmitting a~~
~~transmission request of for an~~ said updated version of said
received program to said at least one of said at least one program
distribution site in response to the reception of a notification
received from said at least one of said at least one program
distribution site that said received program has been updated,
and

~~updating, with the program transmitted from said program~~
~~distribution site in response to said transmission request of said~~
~~updated program, the~~ modifying or replacing said corresponding
received program stored in advance in said storage using said
updated version of said received program from said at least one
of said at least one program distribution site.

13. (Currently Amended) A method ~~of~~ for distributing a programs to be operated on a
server node and/or at least one client node connected to a network using a
network gateway, wherein said ~~for distributing, to nodes connected to a network~~
that in turn is connected to a data communication network through the said
network gateway, a program to be operated on each node, wherein a at least one
program distribution site is connected to said data communication network, and
wherein said at least one program distribution site (i) holding said holds a server
program and/or a client program necessary for communication with a server
using said server program, and having (ii) has a function of distributing, upon
request, a requested said server and/or client program to a node that issued said
request is connected connected to said network in response to a request by said
network gateway therefor.

said method of distributing a program using a network gateway
 comprising the steps of:

preparing in said network gateway a management table
storing management information for said server each of
nodes connected to said network;
receiving at said network gateway program information of
relating to a program to be executed held by a node
connected to said network from a corresponding at least
one of said at least one program distribution site, and
storing said received information relating to said
program in a storage provided in association with said
network gateway;

detecting at said network gateway an updated version of a said program held by said node connected to said network stored in said at least one of said at least one program distribution site, and updating the corresponding said information relating to said program held by said node connected to said network information stored in said storage with the program information of the new relating to said updated version of said program held by said node connected to said network stored in said at least one of said at least one program distribution site; and applying the program transmitting said information of relating to said new updated version of said program to held by said a node connected to said network to said node connected to said network holding said program that holds an old version of said updated program, and requesting updating of said program in said storage in response to a request by said network gateway; and determining at said node connected to said network holding said program whether an updated version of said program should be requested by said node based upon said information relating to said updated version of said program held by said node provided to said node by said network gateway

it becomes possible for the node holding the old version of said updated program to determine whether a program is to be newly received from said program distribution site, based upon the information received from said gateway.

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14. (Currently Amended) The method of for distributing a programs using a network gateway according to claim 13, wherein

said step of updating ~~with~~ said ~~new~~ program

information ~~includes~~ comprises the steps of:

detecting whether a said program held by said

node is has been updated or not by making an

periodic inquiry as to whether the program is

updated or not periodically to said at least one of

said at least one program; distribution site,

if a response to an inquiry indicates that said

program held by said node has been updated,

transmitting a ~~transmission~~ request of the

program for program information relating to said

updated version of said program held by said

node of an updated program to said at least one

of said at least one program distribution site, and

updating, ~~with the program information~~

~~transmitted from said program distribution site~~

~~in response to said transmission request of the~~

~~program information of said updated program;~~

~~the~~ modifying or replacing said program

information relating to said of the corresponding

program held by said node stored in said storage

in advance using said updated version of said

program information relating to said program

held by said node held in said at least one of said

at least one program distribution site.

15. (Currently Amended) The method of for distributing a programs using a network

gateway according to claim 13, wherein

~~said step of updating with said new program information~~

said program information relating to said program held by said node

comprises includes the steps of:

~~responsive to reception of a notification of an~~

~~update of a program from said program~~

~~distribution site, transmitting a transmission~~

~~request of the program for information relating~~

~~to an updated version of said updated program~~

~~held by said node to said at least one of said at~~

~~least one program distribution site in response to~~

~~the reception of a notification of an update of~~

~~said program held by said node received from~~

~~said at least one of said at least one program~~

~~distribution site, and~~

~~updating, with the program information of the~~

~~program transmitted from said program~~

~~distribution site in response to said transmission~~

~~request of the program information of said~~

~~updated program, the program information of~~

~~the corresponding modifying or replacing said~~

~~program stored in advance in said storage~~

~~information relating to said program held by said~~

~~node stored in said storage using said updated~~

~~version of said program information relating to~~

~~said program held in said node held in said at~~

~~least one of said at least one program~~

~~distribution site.~~

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